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**Bryophytes collected during the 12th “Iter Mediterraneum” (Tunisia, 24 March – 4 April, 2014). First contribution****Abstract**

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Part of the bryophytes collected during Iter Mediterraneum XII is listed. Some noteworthy species were found: *Dicranella howei*, had so far been recorded only doubtfully from Tunisia; *Funaria hygrometrica*, *Grimmia laevigata*, *Grimmia trichophylla*, *Imbricbryum alpinum*, *Pogonatum nanum*, *Rhynchostegium riparioides*, *Scleropodium touretii*, *Scorpiurium circinatum*, *Thamnobryum alopecurum*, *Timmia barbuloidea*, *Tortella squarrosa*, *Tortula muralis* and *Tortula vahlana*, had not been reported from that country for more than half a century.

*Key words:* Flora of Tunisia, Bryophytes, Itinera Mediterranea, OPTIMA.

**Introduction**

During the 12th Iter Mediterraneum of OPTIMA, held in Tunisia from 24 March to 4 April 2014, bryophyte specimens were collected by G. Domina and F. M. Raimondo. The material, 428 specimens in total, is deposited in the *Herbarium Mediterraneum Panormitanum* (PAL).

In this contribution a preliminary list is presented, limited to the so far identified species. Nomenclature and statement of presence in Tunisia follow Ros & al. (2007) for the liverworts and Ros & al. (2013) for the mosses.

**Results**

55 taxa (1 hornwort, 11 liverworts, 44 mosses) belonging to 30 genera of 26 families have been identified. The presence of *Dicranella howei*, a species reported from Tunisia but doubtfully, is confirmed. Moreover, 14 taxa that had not been recorded from Tunisia for at least half a century have been found again. They are marked with an asterisk (\*) in the following list. Figures in **bold** refer to the numbered col-

lecting localities detailed in Greuter & Domina (2015: 23-25, Table 1). To make the paper self-contained, locality data are nevertheless repeated here.

#### ANTHOCEROTOPHYTINA (hornworts)

*Phymatoceros bulbiculosus* (Brot.) Stotler & al. – **18**: Gouv. Bizerte, coast c. 6.5 km NNW Bizerte, near the Roman grottos, 0-60 m a.s.l., 37°19'59"N, 9°50'43"E, 29/3/2014, *Raimondo 1*.

#### MARCHANTIOPHYTINA (liverworts)

*Calypogeia fissa* (L.) Raddi – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo 2*.

*Cephaloziella turneri* (Hook.) Müll. Frib. – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo 3*.

*Conocephalum conicum* (L.) Dumort. – **39**: Gouv. Jendouba, 4.5 km S of Aïn Draham, roadside, 680-700 m a.s.l., 36°44'20"N, 8°40'57"E, 3/4/2014, *Raimondo 4*.

*Frullania dilatata* (L.) Dumort. – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo 5*; **41**: Gouv. Jendouba, 2.8 km S of Aïn Draham, c. 1 km NE of the sport training centre, 660-670 m a.s.l., 36°45'16"N, 8°49'17"E, 4/4/2014, *Raimondo 6*.

*Jungermannia gracillima* Sm. – **41**: Gouv. Jendouba, 2.8 km S of Aïn Draham, c. 1 km NE of the sport training centre, 660-670 m a.s.l., 36°45'16"N, 8°49'17"E, 4/4/2014, *Raimondo 7*.

*Lunularia cruciata* (L.) Lindb. – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo 8*.

*Porella platyphylla* (L.) Pfeiff. – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo 9*.

*Reboulia hemisphaerica* (L.) Raddi – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo 10*.

*Riccia gougetiana* Durieu & Mont. var. *gougetiana* – **5**: Gouv. Nabeul, Massif of Jebel Sidi Abderrahmane, c. 9 km NW Al Middah, NW of small village, 200-280 m a.s.l., 36°46'45"N, 10°45'31"E, 25.3.2014, *Domina 11*.

*Targionia hypophylla* L. – **37**: Gouv. Jendouba, El Feidja National Park, track to a small forest house ENE of the Park Centre, 850-865 m a.s.l., 36°30'25"N, 8°19'47"E, 3/4/2014, *Raimondo 12*.

#### BRYOPHYTINA (mosses)

*Barbula unguiculata* Hedw. – **10**: Gouv. Nabeul, c. 1.6 km NW of El Haouaria, coast near the Phoenician-Roman caves, 5-70 m a.s.l., 37°3'28"N, 10°59'46"E, 26/3/2014, *Domina 13*.

*Bryum dichotomum* Hedw. – **5**: Gouv. Nabeul, Massif of Jebel Sidi Abderrahmane, c. 9 km NW Al Middah, NW of small village, 200-280 m a.s.l., 36°46'45"N, 10°45'31"E, 25.3.2014, *Domina 14*.

*Dicranella heteromalla* (Hedw.) Schimp. – **24**: Gouv. Bizerte, city of Bizerta, promenade by the beach hotels, 10 m a.s.l., 37°16'51"N, 9°52'38"E, 31/3/2014, *Raimondo 15*.

- \**Dicranella howei* Renaud & Cardot – **10:** Gouv. Nabeul, c. 1.6 km NW of El Haouaria, coast near the Phoenician-Roman caves, 5-70 m a.s.l., 37°3'28"N, 10°59'46"E, 26/3/2014, *Domina* 16; **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 17.
- Didymodon insulanus* (De Not.) M. O. Hill – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 18.
- Didymodon luridus* Hornsch. – **10:** Gouv. Nabeul, c. 1.6 km NW of El Haouaria, coast near the Phoenician-Roman caves, 5-70 m a.s.l., 37°3'28"N, 10°59'46"E, 25.3.2014, *Domina* 19; **17:** Gouv. Bizerte, Jebel Ichkeul, S of Lake Ichkeul, c. 8 km W of Menzel Bourgiba, peninsula N and hill W of the mineral well, 0-100 m a.s.l., 37°8'20"N, 9°41'32"E, 29/3/2014, *Raimondo* 20.
- Encalypta vulgaris* Hedw. – **12:** Gouv. Zaghouan, Massif of Jebel Zaghouan, road to Jebel Zaghouan from the NW side, 500-630 m a.s.l., 36°21'53"N, 10°5'25"E, 27/3/2014, *Domina* 21.
- Fissidens bryoides* Hedw. var. *bryoides* – **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 22.
- Fissidens serrulatus* Brid. – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 23.
- Fissidens taxifolius* Hedw. subsp. *taxifolius* – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 24.
- \**Funaria hygrometrica* Hedw. – **37:** Gouv. Jendouba, El Feidja National Park, track to a small forest house ENE of the Park Centre, 850-865 m a.s.l., 36°30'25"N, 8°19'47"E, 3/4/2014, *Raimondo* 25; **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 26.
- \**Grimmia laevigata* (Brid.) Brid. – **36:** Gouv. Jendouba, El Feidja National Park, between the Park Centre and the watch tower, on rocks, 710-770 m a.s.l., 36°29'34"N, 8°18'19"E, 3/4/2014, *Raimondo* 27.
- Grimmia lisae* De Not. – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 28.
- Grimmia pulvinata* (Hedw.) Sm – **16:** Gouv. Ben Arous, Jebel Ressay, c. 3.5 km SW of Dawwar at Talib 'Ali, 80-200 m a.s.l., 36°36'24"N, 10°19'20"E, 28/3/2014, *Domina* 29.
- \**Grimmia trichophylla* Grev. – **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 30.
- Homalothecium sericeum* (Hedw.) Schimp. – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 31; **12:** Gouv. Zaghouan, Massif of Jebel Zaghouan, road to Jebel Zaghouan from the NW side, 500-630 m a.s.l., 37°8'20"N, 9°41'32"E, 27/3/2014, *Domina* 32.
- Hypnum cupressiforme* Hedw. var. *cupressiforme* – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 33; **41:** Gouv. Jendouba, 2.8 km S of Aïn Draham, c. 1 km NE of the sport training centre, 660-670 m a.s.l., 36°45'16"N, 8°49'17"E, 4/4/2014, *Raimondo* 34; **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 35.

- \**Imbriobryum alpinum*** (Huds. ex With.) N. Pedersen – **41:** Gouv. Jendouba, 2.8 km S of Aïn Draham, c. 1 km NE of the sport training centre, 660-670 m a.s.l., 36°45'16"N, 8°49'17"E, 4/4/2014, *Raimondo* 36.
- Kindbergia praelonga*** (Hedw.) Ochyra – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 37; **37:** Gouv. Jendouba, El Feidja National Park, track to a small forest house ENE of the Park Centre, 850-865 m a.s.l., 36°30'25"N, 8°19'47"E, 3/4/2014, *Raimondo* 38.
- Leptodon smithii*** (Hedw.) F. Weber & D. Mohr – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 39; **34:** Gouv. Jendouba, 1 km N of Aïn Draham, 770-780 m a.s.l., 36°47'24"N, 8°41'3"E, 2/4/2014, *Raimondo* 40; **25:** Gouv. Bizerte, c. 5 km SW of Bizerta, N Habib Arifa, along the road in parallel to the highway, 20-25 m a.s.l., 37°14'53"N, 9°55'3"E, 31/3/2014, *Raimondo* 41.
- Leucodon sciuroides*** (Hedw.) Schwägr. – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 42; **37:** Gouv. Jendouba, El Feidja National Park, track to a small forest house ENE of the Park Centre, 850-865 m a.s.l., 36°30'25"N, 8°19'47"E, 03/4/2014, *Raimondo* 43; **34:** Gouv. Jendouba, 1 km N of Aïn Draham, 770-780 m a.s.l., 36°47'24"N, 8°41'3"E, 2/4/2014, *Raimondo* 44.
- Nogopterium gracile*** (Hedw.) Crosby & W. R. Buck – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 45; **25:** Gouv. Bizerte, c. 5 km SW of Bizerta, N Habib Arifa, along the road in parallel to the highway, 20-25 m a.s.l., 37°14'53"N, 9°55'3"E, 31/3/2014, *Raimondo* 46.
- Orthotrichum affine*** Schrad. ex Brid. – **34:** Gouv. Jendouba, 1 km N of Aïn Draham, 770-780 m a.s.l., 36°47'24"N, 8°41'3"E, 2/4/2014, *Raimondo* 47.
- Orthotrichum diaphanum*** Schrad. ex Brid. – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 48; **25:** Gouv. Bizerte, c. 5 km SW of Bizerta, N Habib Arifa, along the road in parallel to the highway, 20-25 m a.s.l., 37°14'53"N, 9°55'3"E, 31/3/2014, *Raimondo* 49.
- Orthotrichum rupestre*** Schleich. ex Schwägr. – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 50; **36:** Gouv. Jendouba, El Feidja National Park, between the Park Centre and the watch tower, on rocks, 710-770 m a.s.l., 36°29'34"N, 8°18'19"E, 3/4/2014, *Raimondo* 51.
- \**Pogonatum nanum*** (Hedw.) P. Beauv. – **41:** Gouv. Jendouba, 2.8 km S of Aïn Draham, c. 1 km NE of the sport training centre, 660-670 m a.s.l., 36°45'16"N, 8°49'17"E, 4/4/2014, *Raimondo* 52; **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 53.
- Ptychostomum capillare*** (Hedw.) Holyoak & N. Pedersen – **40:** Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 54; **24:** Gouv. Bizerte, city of Bizerta, promenade by the beach hotels, 10 m a.s.l., 37°16'51"N, 9°52'38"E, 31/3/2014, *Raimondo* 55; **25:** Gouv. Bizerte, c. 5 km SW of Bizerta, N Habib Arifa, along the road in parallel to the highway, 20-25 m a.s.l., 37°14'53"N, 9°55'3"E, 31/3/2014, *Raimondo* 56; **21:** Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 57.
- Ptychostomum torquescens*** (Bruch & Schimp.) Ros & Mazimpaka – **1:** Gouv. Ben Arous, Massif of Bou Kornine, c. 3-4 km SSE of Hammam-Lif, 120-300 m a.s.l., 36°42'15"N, 10°20'31"E, 24.3.2014, *Domina* 58.

- \**Rhynchostegium riparioides* (Hedw.) Cardot – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 59.
- \**Scleropodium touretii* (Brid.) L. F. Koch – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 60; **16**: Gouv. Ben Arous, Jebel Ressay, c. 3.5 km SW of Dawwar at Talib 'Ali, 80-200 m a.s.l., 36°36'24"N, 10°19'20"E, 28/3/2014, *Domina* 61.
- \**Scorpiurium circinatum* (Bruch) M. Fleisch. & Loeske – **24**: Gouv. Bizerte, city of Bizerta, promenade by the beach hotels, 10 m a.s.l., 37°16'51"N, 9°52'38"E, 31/3/2014, *Raimondo* 62; **1**: Gouv. Ben Arous, Massif of Bou Kornine, c. 3-4 km SSE of Hammam-Lif, 120-300 a. s. l., 36°42'15"N, 10°20'31"E, 24.3.2014, *Domina* 63.
- Sphagnum auriculatum* Schimp – **41**: Gouv. Jendouba, 2.8 km S of Aïn Draham, c. 1 km NE of the sport training centre, 660-670 m a.s.l., 36°45'16"N, 8°49'17"E, 3/4/2014, *Raimondo* 64.
- Syntrichia laevipila* Brid. – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 65; **34**: Gouv. Jendouba, 1 km N of Aïn Draham, 770-780 m a.s.l., 36°47'24"N, 8°41'3"E, 2/4/2014, *Raimondo* 66.
- \**Thamnobryum alopecurum* (Hedw.) Nieuwl. ex Gangulee var. *alopecurum* – **37**: Gouv. Jendouba, El Feidja National Park, track to a small forest house ENE of the Park Centre, 850-865 m a.s.l., 36°30'25"N, 8°19'47"E, 3/4/2014, *Raimondo* 67.
- \**Timmiella barbuloidea* (Brid.) Mönk. – **17**: Gouv. Bizerte, Jebel Ichkeul, S of Lake Ichkeul, c. 8 km W of Menzel Bourgiba, peninsula N and hill W of the mineral well, 0-100 m a.s.l., 37°8'20"N, 9°41'32"E, 29/3/2014, *Raimondo* 68.
- Tortella flavovirens* (Bruch) Broth. var. *flavovirens* – **1**: Gouv. Ben Arous, Massif of Bou Kornine, c. 3-4 km SSE of Hammam-Lif, 120-300 m a.s.l., 36°42'15"N, 10°20'31"E, 24.3.2014, *Domina* 69.
- Tortella nitida* (Lindb.) Broth. – **10**: Gouv. Nabeul, c. 1.6 km NW of El Haouaria, coast near the Phoenician-Roman caves, 5-70 m a.s.l., 37°3'28"N, 10°59'46"E, 25.3.2014, *Domina* 70.
- \**Tortella squarrosa* (Brid.) Limpr. – **1**: Gouv. Ben Arous, Massif of Bou Kornine, c. 3-4 km SSE of Hammam-Lif, 120-300 m a.s.l., 36°42'15"N, 10°20'31"E, 24.3.2014, *Domina* 71.
- Tortula subulata* Hedw. – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 72.
- \**Tortula muralis* Hedw. – **1**: Gouv. Ben Arous, Massif of Bou Kornine, c. 3-4 km SSE of Hammam-Lif, 120-300 m a.s.l., 36°42'15"N, 10°20'31"E, 24.3.2014, *Domina* 73.
- \**Tortula vahaliana* (Schultz.) Mont. – **21**: Gouv. Bizerte, Cap Serrat, E slope and around houses on the beach, 0-50 m a.s.l., 37°13'13"N, 9°13'24"E, 30/3/2014, *Raimondo* 74.
- Trichostomum brachydontium* Bruch – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 75; **24**: Gouv. Bizerte, city of Bizerta, promenade by the beach hotels, 10 m a.s.l., 37°16'51"N, 9°52'38"E, 31/3/2014, *Raimondo* 76; **17**: Gouv. Bizerte, Jebel Ichkeul, S of Lake Ichkeul, c. 8 km W of Menzel Bourgiba, peninsula N and hill W of the mineral well, 0-100 m a.s.l., 37°8'20"N, 9°41'32"E, 29/3/2014, *Raimondo* 77; **1**: Gouv. Ben Arous, Massif of Bou Kornine, c. 3-4 km SSE of Hammam-Lif, 120-300 a.s.l., 36°42'15"N, 10°20'31"E, 24.3.2014, *Domina* 78.

*Weissia condensa* (Voit) Lindb. var. *condensa* – **5**: Gouv. Nabeul, Massif of Jebel Sidi Abderrahmane, c. 9 km NW Al Middah, NW of small village, 200-280 m a.s.l., 36°46'45"N, 10°45'31"E, 25.3.2014, *Domina* 79; **16**: Gouv. Ben Arous, Jebel Ressay, c. 3.5 km SW of Dawwar at Talib 'Ali, 80-200 m a.s.l., 36°36'24"N, 10°19'20"E, 28/3/2014, *Domina* 80.

*Zygodon rupestris* Schimp. ex Lorentz – **40**: Gouv. Jendouba, NE of Aïn Draham, 730 m a.s.l., 36°47'23"N, 8°41'22"E, 3/4/2014, *Raimondo* 81; **34**: Gouv. Jendouba, 1 km N of Aïn Draham, 770-780 m a.s.l., 36°47'24"N, 8°41'3"E, 2/4/2014, *Raimondo* 82.

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